

## A New Species of *Adelpha* (Nymphalidae) from Parque Nacional Braulio Carrillo, Costa Rica

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and

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**Abstract.** The new butterfly species *Adelpha stilesiana* (Nymphalidae) is described from Costa Rica. This new species apparently represents another Costa Rican butterfly endemic to the Carrillo Belt. A few rudimentary field observations are also presented.

In Costa Rica, there are 26 species in the genus *Adelpha* (Nymphalidae) that fall roughly into two groups; the typical white banded species, and a smaller group of species that are brown dorsally with a broad orange band across the forewings and without white on either wing. In this latter group there are four species recorded from Costa Rica: *Adelpha melanthé* Bates, *A. zalmona sophax* Godman & Salvin, *A. boreas tizona* Felder, and *A. salmoneus salmonides* Hall. The interested reader is referred to either Fruhstorfer (1910-1912) or Godman & Salvin (1879-1901) where these species are illustrated. During the course of a long term study on the butterfly fauna of Parque Nacional Braulio Carrillo, a fifth and undescribed species of the orange-banded group has come to our attention. This species is not found in any world museum studied by one of us (PJD), and it is quite distinct from its congeners. We here describe this new species of *Adelpha* and give some general notes on its distribution and behavior in the field.

### *Adelpha stilesiana* DeVries & Chacon new species

**Male: Eyes.** Sparsely hairy except for a dense patch of hairs on the dorsum of the eyes near the base of the antennae. **Antennae.** Dark brown and naked except for a small patch of white scales on the ventrum near the base.

**FW upperside:** Dark brown from base to distal end of cell; submarginal area with a wide orange-yellow band which has a somewhat jagged inner and outer margin; the band runs from costa at R<sub>1</sub>-R<sub>2</sub> and extends broadly to distal wing margin at M<sub>2</sub> to 2A. **HW upperside:** Dark brown as in the FW but bears a faint subcostal line of lighter brown. **FW underside:** Similar to *A. salmoneus* and *A. zalmona* but differing distinctly as follows: cell area greyish-violet bearing two wide rufous

bands, one in mid-cell, the other at the end of the cell; both bands are thinly bordered by dark brown; are distad of cell end washed with pale ochre, being brightest on distal margin between  $M_2-2A$ ; a series of six prominent whitish postmedial spots between veins  $R_3-R_4$ ,  $R_4-M_1$ ,  $M_1-M_2$ ,  $M_2-M_3$ ,  $M_3-Cu_1$ , and  $Cu_1-Cu_2$ ; a series of small spots run distad to those just described but beginning in  $R_5-M_1$ , running posteriorly between all veins and terminating in a double spot in cell  $Cu_2$  near the tornus. **HW underside:** Similar to that of *A. salmoneus* but with a dingy violet overcast to the ground color; a dark brown postmedial line runs from the costal margin, inflating in the discal area, and terminating in the anal angle as a rufous patch; marginal lobes of wing with spots of ochre centered on veins  $M_1$ ,  $M_2$ ,  $Cu_1$ , and  $Cu_2$ ; fringe dark brown.

**Genitalia:** See figure (3) for details.

**Female:** The solitary female is virtually identical in pattern to the male.

**Length of FW:** male: 32 mm; female: 34 mm.

**Types:** Holotype: male, Costa Rica, Provincia de San Jose, Parque Nacional Braulio Carrillo, Estacion La Montura, May 24, 1981, 1100 m altitude, leg. Ruben Canet M.. Paratype: female, Costa Rica, San Jose, Carrillo, La Montura, 1100 m, June 11, 1980, leg. F. G. Stiles. Both in the British Museum (Natural History).

**Diagnosis.** See figures 1 and 2 for details. This species can be distinguished from all other Costa Rican congeners by the wide orange forewing band that ends broadly along the distal margin. This character can be used to distinguish this species in the field.

**Etymology:** We name this species for F. Gary Stiles who, incredibly enough, let us talk him into carrying a butterfly net in addition to his bird collecting gear and who successfully mist-netted the first specimen.

## Discussion

*Adelpha stilesiana* is known only from two specimens (the types) and collected in the same locality. This locality is part of the Carrillo Belt (see DeVries, 1980) which is known for its unusual faunal and floral characteristics. The Carrillo Belt harbors a number of endemic Costa Rican

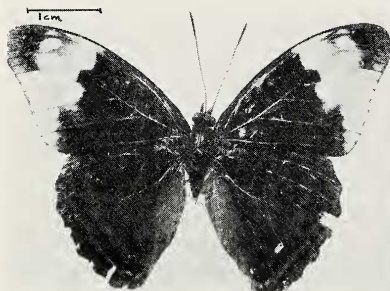


Fig. 1. Dorsal aspect of holotype.

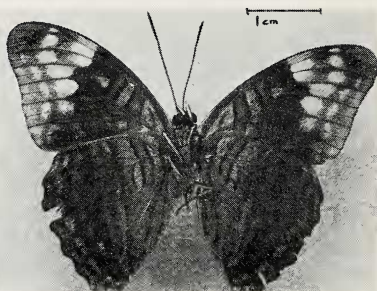


Fig. 2. Ventral aspect of holotype.

butterflies and is also the habitat where some South American species terminate their northern range (e. g. *Morpho granadensis* Felder, *Heliconius eleuchia* Hewitson, *Eunica norica* Hewitson, and *Epiphile eriopis* Hewitson). Due to the total absence of specimens of *A. stilesiana* in the British Museum (Natural History), Smithsonian Institution, Carnegie Museum, Allyn Museum of Entomology, and numerous private collections viewed by us, we suggest that it is a species endemic to the Carrillo Belt.

From our work in Parque Carrillo, we have observed a number of individuals of *A. stilesiana* from 1100 to 800 meters elevation. Individuals perch on foliage along the insides of ravines or in the forest canopy from 0800 to about 1100 hours. As most other *Adelpha* species in Costa Rica, individuals perch from 5 to 10 minutes at the same spot and make sorties out from the perch, returning repeatedly to the same spot. They then move to a different area that is usually 50 or more meters away.

On the wing, *A. stilesiana* looks very similar to *A. salmoneus* and *A. zalmona sophax* which also occur in the same habitat. Positive field identification of *A. stilesiana* is easy when the insect is perched. The distinctive ochraceous forewing band can be seen with the naked eye or with binoculars. We have seen individuals of this species during May, June and July.

*Acknowledgments:* We thank Ruben Canet for supplying us with the holotype and F. G. Stiles for the paratype and the loan of his jeep. A special thanks to R. Mattoni for illustrating the genitalia and two anonymous reviewers. This study was supported in part from a grant to DeVries by the Society of the Sigma Xi and from the University of Texas. Field assistance came from the Museo Nacional, Servicios

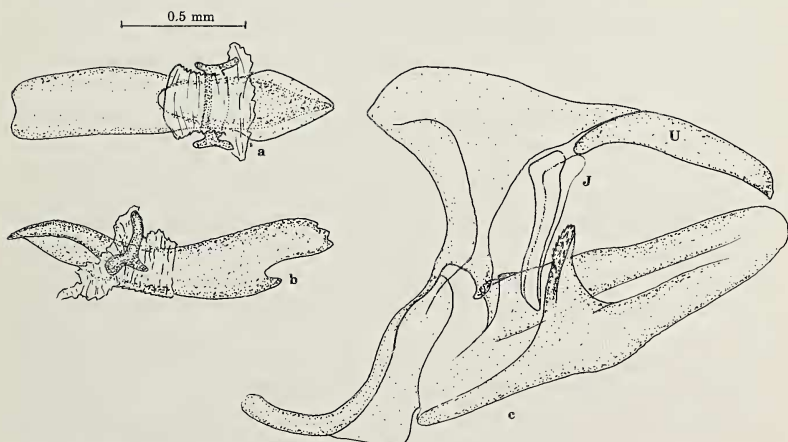


Fig. 3. Genitalia top to bottom: a. Aedeagus dorsal view, b. Ibid, lateral view, c. Lateral view entire genitalia, left valve removed. J = juxta, U = uncus. Scale: 0.5 mm.

de Parques Nacionales, and L. E. Gilbert. This paper is dedicated to the memory of Bill Evans and T. Monk.

*Resumen:* Se describe una especie nueva del genero *Adelpha* (Nymphalidae) del Parque Nacional Braulio Carrillo, Costa Rica. La especie es conocida por solamente dos ejemplares. Se destinga *A. stilesiana* del *A. zalmona sophax*, *A. melanthe*, y *A. solmoneus* por la banda muy ancha en la ala primaria. Los congeneros de *A. stilesiana* estan ilustradas en Fruhstorfer (1910-1912) y Godman & Salvin (1879-1901). Se comunican algunas observaciones sobre la distribucion y la conducta en su habitat endemica en Carrillo.

### Literature Cited

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